

What is claimed is:

- 1                   1.     An isolated low-voltage supply source for a control circuit of a  
2     high-voltage load, in or upstream of a rectifying bridge, comprising:  
3                   a first low-voltage capacitor having a first electrode connected to one  
4     of the rectified output terminals of the bridge; and  
5                   at least one second capacitor providing said low voltage, a first  
6     electrode of the second capacitor being connected to one of the A.C. input terminals  
7     of the bridge, the respective second electrodes of the capacitors being connected by  
8     a high-voltage diode having its cathode connected to the second capacitor.
- 1                   2.     The circuit of claim 1, wherein the charge of the second  
2     capacitor occurs during a conduction period of the bridge when that of its rectifying  
3     elements which connects the respective first electrodes of the capacitors conducts,  
4     this element connecting the electrodes having the most negative potential.
- 1                   3.     The circuit of claim 1, wherein the first capacitor is a capacitor of  
2     low-voltage supply of a circuit downstream of the bridge.
- 1                   4.     The circuit of claim 1, comprising a second high-voltage diode  
2     having its anode connected, via a logic control switch, to the second electrode of the  
3     first capacitor, and having its cathode connected to a logic input terminal of the  
4     control circuit upstream of the bridge.
- 1                   5.     The circuit of claim 1, wherein the rectifying bridge is a fullwave  
2     or three-phase bridge.
- 1                   6.     The circuit of claim 1, wherein the bridge is a composite or  
2     controlled bridge.
- 1                   7.     The circuit of claim 6, wherein said load is formed of at least one  
2     of the rectifying elements of the bridge.
- 1                   8.     The circuit of claim 1, wherein the first capacitor is charged by  
2     an auxiliary winding of a transformer of a switched-mode power supply downstream  
3     of the bridge.
- 1                   9.     A power supply, comprising:  
2     first and second input nodes operable to receive an AC voltage;

3 first and second output nodes operable to provide a rectified voltage;  
4 a circuit coupled to one of the input nodes;  
5 a first capacitor having a first node coupled to one of the output nodes  
6 and having a second node;  
7 a second capacitor having a first node operable to provide a signal to  
8 the circuit and having a second node coupled to one of the input nodes; and  
9 a first diode having first and second nodes respectively coupled to the  
10 second node of the first capacitor and to the first node of the second capacitor.

1 10. The power supply of claim 9 wherein the circuit and the second  
2 capacitor are coupled to the same one of the input nodes.

1 11. The power supply of claim 9, further comprising a full-wave  
2 rectifier coupled to the input nodes and to the output nodes.

1 12. The power supply of claim 9, further comprising:  
2 a load coupled to one of the first and second input nodes;  
3 a switch coupled to the load; and  
4 wherein the circuit is operable to control the switch.

1 13. The power supply of claim 9, further comprising:  
2 a full-wave rectifier coupled to the input nodes and to the output nodes  
3 and to the circuit; and  
4 wherein the circuit is operable to control operation of the full-wave  
5 rectifier.

1 14. The power supply of claim 9, further comprising:  
2 a third capacitor having a first node coupled to the circuit and having a  
3 second node coupled to one of the input nodes; and  
4 a second diode having a first node coupled to the first node of the third  
5 capacitor and having a second node coupled to the second node of the first  
6 capacitor.

1 15. The power supply of claim 9, further comprising a DC-DC  
2 converter coupled to the output nodes and including a transformer winding coupled  
3 to the second node of the first capacitor.

1                   16.    The power supply of claim 9 wherein the first and second nodes  
2 of the first diode respectively comprise a cathode and an anode of the diode.

1                   17.    The power supply of claim 9, further comprising a rectifier  
2 coupled to the input nodes and to the output nodes and including a second diode  
3 coupled between the respective second nodes of the first and second capacitors.

1                   18.    The power supply of claim 9, further comprising a rectifier  
2 coupled to the input nodes and to the output nodes and including a second diode  
3 having a cathode coupled to the second node of the second capacitor and having an  
4 anode coupled to the first node of the first capacitor.

1                   19.    A method, comprising:  
2                    charging a second capacitor with a first capacitor when a first input  
3 node is positive relative to a second input node, the second capacitor having a first  
4 node coupled to a first node of the first capacitor and having a second node coupled  
5 to the second input node, the first capacitor having a second node coupled to an  
6 output node of a rectifier that is coupled to the first and second input nodes; and  
7                    electrically isolating the first capacitor from the second capacitor when  
8 the first input node is negative relative to the second input node.

1                   20.    The method of claim 19, further comprising powering with the  
2 first capacitor a circuit coupled to one of the input nodes.

1                   21.    The method of claim 19 wherein:  
2                    charging the first capacitor comprises forward biasing a diode that is  
3 coupled between the respective first nodes of the first and second capacitors; and  
4                    electrically isolating the first capacitor from the second capacitor  
5 comprises reverse biasing the diode.